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NOTES FROM PACIFIC COAST OBSERVATORIES.

NOTE ON COMET *d* 1907 (DANIEL).

This comet was discovered by DANIEL at Princeton on June 9, 1907. The preliminary elements by CRAWFORD, EINARSON, and Miss GLANCEY, of the Berkeley Astronomical Department, indicate that it will pass perihelion on September 4th at about half the Earth's mean distance from the Sun.

In the early part of July I observed the comet here with the 12-inch telescope, and found it to be of about the seventh magnitude and growing brighter. Photographic observations with the Crocker photographic telescope were begun on July 10th and continued every night until July 21st, after which the late setting of the Moon prevented exposures of sufficient length to be valuable. With the Moon away it was possible to obtain exposures two hours long.

The first photograph showed a tail of five or six degrees' length with two longitudinal dark lanes and several knotty condensations. The second, (July 11th) also showed condensations, but since the date of this photograph the tail has consisted of straight or slightly curved, smooth streamers. No identity could be established between the condensation of the tail of July 10th and those of July 11th, and therefore their velocity of recession from the nucleus could not be determined.

Since the photographs were begun the comet has grown rapidly brighter, and the tail has increased rapidly in length and complexity. On the night of July 20th no less than six streamers diverged from the nucleus, and these subdivided into several branches, extending about 12° from the head.

In photographic observations of comets it has been found that, as a rule, the tail changes completely between consecutive nights, so that it is desirable that negatives be made at intervals of a few hours in order that the velocity of particles within the tail may be determined. With this object in view, a second lens, of 6-inch aperture and 32-inch focal length, was mounted

beside the Willard lens. By this means it is possible to obtain two one-hour exposures each night, together with one two-hour exposure, which will show more of the faint detail. The apparatus was used in this way on the nights of July 19th and 20th. Measures made on the point of forking of the principal tail on the short-exposure plates of July 20th indicate a component of velocity of recession from the head, perpendicular to the line of sight, of about seventy miles per second. This apparent motion of the point of forking may be real, or it may be an illusion due to the closing together of the two branches of the fork, which would cause the point of separation to seem to move outward.

The comet is now of the third magnitude, and is rapidly growing brighter. Since July 17th the tail, as well as the nucleus, has been visible to the eye. An ephemeris computed from CRAWFORD's elements shows that the comet will reach its maximum theoretical brilliancy about August 20th, when it will be about twenty times as bright as on June 15th and about twice as bright as it is now. This calculation is of course based on the assumption that all of its light is reflected sun-light, and the actual brilliancy may much exceed the theoretical. At the time of perihelion the comet will be about an hour and a half west of the Sun in right ascension, and it is hoped to extend the series of photographs much further.

LICK OBSERVATORY, July 24, 1907.

J. C. DUNCAN.

SPECTROGRAPHIC OBSERVATIONS OF VENUS FOR SOLAR PARALLAX.

The determination of the solar parallax by spectrographic methods has long been under consideration among astrophysicists, but until very recently it has been thought to be out of the reach of spectrographs now in use. The work of taking a series of spectrograms of stars having small latitude was begun by Sir DAVID GILL at the Cape Observatory, and is now in progress. The accuracy with which this series will determine the solar parallax has not yet been fully ascertained; at least it has not been published. Professor KÜSTNER, in an article reviewed by Dr. J. H. MOORE in Vol. 17, 197, of these *Publications*, gets a p. e. of $\pm 0.22^{\text{km}}$ for a single plate of *Arcturus*; using eighteen plates, he obtained the value $8''.844 \pm 0''.017$ for the parallax.